UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Print Date: 11/25/02

Subject: Review of Region 5 Data for Himco Dump

From: Tom Sedlacek, Chemist
Contractor to Region 5 Central Regional Laboratory
Submitted to CRL on 10/16/03

To: Superfund, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

Attached are Results for: Himco Dump

Analyses included in this report:

THF & 1,4-Dioxane

Sylvia Griffin NOV 2[illegible] /2002

Data Management Coordinator and Date Received

NOV 27 2002

Date Transmitted: ____/____/_____

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

_____/____/_____

Received by and Date

Comments:

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Telephone (312) 353-8302 Facsimile (312) 353-8307

WORK ORDER

Printed: 11/25/02 10:54:35A

E2K0101

IITRI - ESAT Contract

Client:	**Superfund, US EPA Region 5**	**Project Manager:**	**Jennifer Mokos**
Project:	**Himco Dump**	**Project Number:**	**2003SY01**

Report To:

Howard Pham	77 West Jackson Boulevard	Phone: (312) 353-2310
Superfund, US EPA Region 5	Chicago, IL 60604	Fax: (312) 886-6171

Date Due:	Dec-03-02 15:00 (30 day TAT)		
Received By:	William Sargent	Date Received:	Nov-01-02 11:27
Logged In By:	William Sargent	Date Logged In:	Nov-01-02 12:16

Samples Received at:	°C
All containers intact:	No
Sample labels/COC agree:	No
Samples Preserved Properly:	No
Custody Seals Present:	No

Analysis	Due	TAT	Expires	Comments
E2K0101-01 2003SY01S01-SINK [Water] Sampled Oct-31-02 07:40 Central				
Volatiles Full List	Dec-03-02 12:00	30	Nov-07-02 07:40	
THF & 1,4-Dioxane	Dec-03-02 12:00	30	Nov-14-02 07:40	
E2K0101-02 2003SY01R02-Pump Blank [Water] Sampled Oct-31-02 11:50 Central				
GFAA 5100 Cd	Dec-03-02 12:00	30	Apr-29-03 11:50	
tiles Full List	Dec-03-02 12:00	30	Nov-07-02 11:50	
SVOA Standard List	Dec-03-02 12:00	30	Nov-07-02 11:50	
Cyanide, Total	Dec-03-02 12:00	30	Nov-14-02 11:50	pH10
Hg Total CVAA	Dec-03-02 12:00	30	Nov-28-02 11:50	pH2
Solids, Dry Weight	Dec-03-02 12:00	30	Nov-07-02 11:50	For SVOA Standard List in batch EK21101
B ICP (W)	Dec-03-02 12:00	30	Apr-29-03 11:50	pH2
THF & 1,4-Dioxane	Dec-03-02 12:00	30	Nov-14-02 11:50	
Metals SF ICP (W)	Dec-03-02 12:00	30	Apr-29-03 11:50	pH2
GFAA SIMAA Metals	Dec-03-02 12:00	30	Apr-29-03 11:50	pH2
E2K0101-03 2003SY01R03-Trip Blank [Water] Sampled Oct-31-02 11:50 Central				
Volatiles Full List	Dec-03-02 12:00	30	Nov-07-02 11:50	
THF & 1,4-Dioxane	Dec-03-02 12:00	30	Nov-14-02 11:50	

E2K0101

IITRI - ESAT Contract

Client: Superfund, US EPA Region 5 **Project Manager:** Jennifer Mokos
Project: Himco Dump **Project Number:** 2003SY01

Analysis	Due	TAT	Expires	Comments
E2K0101-04 2003SY01S04-WT116A [Water] Sampled Oct-31-02 13:52 Central				
GFAA 5100 Cd	Dec-03-02 12:00	30	Apr-29-03 13:52	
Volatiles Full List	Dec-03-02 12:00	30	Nov-07-02 13:52	
SVOA Standard List	Dec-03-02 12:00	30	Nov-07-02 13:52	
Cyanide, Total	Dec-03-02 12:00	30	Nov-14-02 13:52	pH10
Hg Total CVAA	Dec-03-02 12:00	30	Nov-28-02 13:52	pH2
Solids, Dry Weight	Dec-03-02 12:00	30	Nov-07-02 13:52	For SVOA Standard List in batch EK21101
B ICP (W)	Dec-03-02 12:00	30	Apr-29-03 13:52	pH2
THF & 1,4-Dioxane	Dec-03-02 12:00	30	Nov-14-02 13:52	
Metals SF ICP (W)	Dec-03-02 12:00	30	Apr-29-03 13:52	pH2
GFAA SIMAA Metals	Dec-03-02 12:00	30	Apr-29-03 13:52	pH2
E2K0101-05 2003SY01D04-WT116A [Water] Sampled Oct-31-02 13:52 Central				
GFAA 5100 Cd	Dec-03-02 12:00	30	Apr-29-03 13:52	
Volatiles Full List	Dec-03-02 12:00	30	Nov-07-02 13:52	
SVOA Standard List	Dec-03-02 12:00	30	Nov-07-02 13:52	
Cyanide, Total	Dec-03-02 12:00	30	Nov-14-02 13:52	pH10
Hg Total CVAA	Dec-03-02 12:00	30	Nov-28-02 13:52	pH2
Solids, Dry Weight	Dec-03-02 12:00	30	Nov-07-02 13:52	For SVOA Standard List in batch EK21101
B ICP (W)	Dec-03-02 12:00	30	Apr-29-03 13:52	pH2
THF & 1,4-Dioxane	Dec-03-02 12:00	30	Nov-14-02 13:52	
Metals SF ICP (W)	Dec-03-02 12:00	30	Apr-29-03 13:52	pH2
GFAA SIMAA Metals	Dec-03-02 12:00	30	Apr-29-03 13:52	pH2
E2K0101-06 2003SY01S05-WT115A [Water] Sampled Oct-31-02 15:00 Central MS/MSD				
A 5100 Cd	Dec-03-02 12:00	30	Apr-29-03 15:00	
Volatiles Full List	Dec-03-02 12:00	30	Nov-07-02 15:00	
SVOA Standard List	Dec-03-02 12:00	30	Nov-07-02 15:00	
Cyanide, Total	Dec-03-02 12:00	30	Nov-14-02 15:00	pH10
Hg Total CVAA	Dec-03-02 12:00	30	Nov-28-02 15:00	pH2
Solids, Dry Weight	Dec-03-02 12:00	30	Nov-07-02 15:00	For SVOA Standard List in batch EK21101
B ICP (W)	Dec-03-02 12:00	30	Apr-29-03 15:00	pH2
THF & 1,4-Dioxane	Dec-03-02 12:00	30	Nov-14-02 15:00	
Metals SF ICP (W)	Dec-03-02 12:00	30	Apr-29-03 15:00	pH2
GFAA SIMAA Metals	Dec-03-02 12:00	30	Apr-29-03 15:00	pH2

Reviewed By Date

CASE NARRATIVE

DATE: November 25, 2002

PROJECT NAME: Data Set E2K0101: Himco Dump Water Samples for Tetrahydrofuran & 1,4-Dioxane analysis

ANALYST: Thomas Sedlacek, IITRI/ESAT

I. CASE DESCRIPTION:

ESAT was given Six water samples for Tetrahydrofuran & 1,4-Dioxane analysis per CRL SOP GCMS024. The samples were analyzed within the fourteen day holding time for preserved water samples. No other problems were observed.

II INSTRUMENT QUALITY CONTROLS:

1. **Instrument Performance Checks:** A GC/MS instrument performance check using *BFB* was made each day of analysis to determine if acceptable EPA tuning criteria were met. The QC criteria are the same as those found in the Statement of Work under the EPAs Contract Laboratory Program and CRL SOPs. All criteria were met, no problems were observed.

2. **Initial Calibrations (IC):** An acceptable five point IC is required for all target compounds before samples can be analyzed. The QC criterion for the IC states each analyte's %RSD must be <30%.

   The Initial Calibration for Tetrahydrofuran & 1,4-Dioxane was run on November 12, 2002 and met all QC requirements. No problems were observed

3. **Continuing calibration (CC):** An acceptable CC is required for all target compounds before samples can be analyzed. The QC criteria for CC states each analytes %D must be <30%.

   All of the analytes in the continuing calibration check for Tetrahydrofuran & 1,4-Dioxane ran on November 13, 2002 met the QC requirements.
   No other problems were observed.

4. **Internal Standard (IS) Area and Retention Time Summary:** The QC criteria states that the IS area of the samples must be within fifty percent of the IS area of the corresponding CC. The RT of the IS for samples must also be within 30 seconds

of the RT of the IS for the corresponding standard. All internal standards met the QC requirements with exception in EK20803-BLK1 the area was out of control high and in EK20803-BLK2 the area was out of control low. No other problems were observed.

II METHOD QUALITY CONTROL:

1. Method Blank Results: A lab blank, was prepared for each day samples were analyzed to check the GC/MS, and the reagents for laboratory contamination.

The Method Blanks EK20803-BLK1 (VBLK111202) and EK20803-BLK2 (VBLK111302) contained the target analyte Tetrahydrofuran.

2. Surrogate Spike Compound Results:
The surrogate recovery was within QC limits for all the Tetrahydrofuran & 1,4-Dioxane samples with the exception of E2K0101-04 (2003SY01S04) which was out of control limits low. In sample E2K0101-04, hits are flagged "J" and non-detects are flagged "UJ".
No other problems were observed.

3. Laboratory Control Sample (LCS) Results:
Only a LCS is required for the Tetrahydrofuran & 1,4-Dioxane analysis and the recovery of all analytes were within QC limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
Sample E2K0101-06 (2003SY01S05) was used as the Matrix Spike/Matrix Spike Duplicate analysis.

The analyte recoveries for Tetrahydrofuran & 1,4-Dioxane matrix spike/spike duplicate were with QC requirements with the exception of Dioxane which exceeded the upper control limit in the matrix spike sample. No action is required

IV. SAMPLE RESULTS:
The raw data and final reviewed reports are archived on R5CRL\Vol2\IITRI-GCMS\TSEDLAC\GCMS7\DATA.

EXAMPLE CALCULATIONS

$$Concentration\ (ug/L) = \frac{(A_x)(I_s)(Df)}{(A\,is)(RRF)(Vs)}$$ Formula for waters

For 1,4-Dioxane in 2003SY01S05 Reported value of 11 ug/L

$$11.1\ (ug/L) = \frac{(3819158)(50)(1)}{(8650701)(.396)(5.0)}$$

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Superfund, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Himco Dump Project Number: 2003SY01 Project Manager: Howard Pham	**Reported:** Nov-25-02 14:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
2003SY01S01-SINK	E2K0101-01	Water	Oct-31-02 07:40	Nov-01-02 11:27
2003SY01R02-Pump Blank	E2K0101-02	Water	Oct-31-02 11:50	Nov-01-02 11:27
2003SY01R03-Trip Blank	E2K0101-03	Water	Oct-31-02 11:50	Nov-01-02 11:27
2003SY01S04-WT116A	E2K0101-04	Water	Oct-31-02 13:52	Nov-01-02 11:27
2003SY01D04-WT116A	E2K0101-05	Water	Oct-31-02 13:52	Nov-01-02 11:27
2003SY01S05-WT115A	E2K0101-06	Water	Oct-31-02 15:00	Nov-01-02 11:27

Tom Sedlacek, Chemist

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Superfund, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Himco Dump Project Number: 2003SY01 Project Manager: Howard Pham	**Reported:** Nov-25-02 14:18

2003SY01S01-SINK
E2K0101-01(Water)
Sampled: Oct-31-02 07:40
Received: Nov-01-02 11:27

Volatiles by GC/MS

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,4-Dioxane	U		3.5	5.0	ug/L	1	EK20803	Nov-08-02	Nov-13-02
Tetrahydrofuran	U		2.2	2.5	"	"	"	"	"
Surrogate: 1,4-Dioxane-d8	56.3			*56.3 %*		*23-117*	"	"	"

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Superfund, US EPA Region 5	Project: Himco Dump	
77 West Jackson Boulevard	Project Number: 2003SY01	**Reported:**
Chicago IL, 60604	Project Manager: Howard Pham	Nov-25-02 14:18

2003SY01R02-Pump Blank
E2K0101-02(Water)
Sampled: Oct-31-02 11:50
Received: Nov-01-02 11:27

Volatiles by GC/MS

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,4-Dioxane	U		3.5	5.0	ug/L	1	EK20803	Nov-08-02	Nov-12-02
Tetrahydrofuran	U		2.2	2.5	"	"	"	"	"
Surrogate: 1,4-Dioxane-d8	93.9			*93.9 %*		*23-11?*	"	"	"

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Superfund, US EPA Region 5	Project: Himco Dump	
77 West Jackson Boulevard	Project Number: 2003SY01	**Reported:**
Chicago IL, 60604	Project Manager: Howard Pham	Nov-25-02 14:18

2003SY01R03-Trip Blank
E2K0101-03(Water)
Sampled: Oct-31-02 11:50
Received: Nov-01-02 11:27

Volatiles by GC/MS

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,4-Dioxane	U		3.5	5.0	ug/L	1	EK20803	Nov-08-02	Nov-13-02
Tetrahydrofuran	U		2.2	2.5	"	"	"	"	"
Surrogate: 1,4-Dioxane-d8	84.7			*84.7 %*	*23-117*		"	"	"

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2003SY01S04-WT116A
E2K0101-04(Water)
Sampled: Oct-31-02 13:52
Received: Nov-01-02 11:27

Volatiles by GC/MS

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,4-Dioxane	9.2	J	3.5	5.0	ug/L	1	EK20803	Nov-08-02	Nov-13-02
Tetrahydrofuran	7.4	J	2.2	2.5	"	"	"	"	"
Surrogate: 1,4-Dioxane-d8	24.9			*24.9 %*	*23-117*		"	"	"

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2003SY01D04-WT116A
E2K0101-05(Water)
Sampled: Oct-31-02 13:52
Received: Nov-01-02 11:27

Volatiles by GC/MS

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,4-Dioxane	32		3.5	5.0	ug/L	1	EK20803	Nov-08-02	Nov-13-02
Tetrahydrofuran	8.7		2.2	2.5	"	"	"	"	"
Surrogate: 1,4-Dioxane-d8	85.1			*85.1 %*	*23-117*		"	"	"

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Superfund, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Himco Dump Project Number: 2003SY01 Project Manager: Howard Pham	**Reported:** Nov-25-02 14:18

2003SY01S05-WT115A
E2K0101-06(Water)
Sampled: Oct-31-02 15:00
Received: Nov-01-02 11:27

Volatiles by GC/MS

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,4-Dioxane	**11**		3.5	5.0	ug/L	1	EK20803	Nov-08-02	Nov-12-02
Tetrahydrofuran	**6.3**		2.2	2.5	"	"	"	"	"
Surrogate: 1,4-Dioxane-d8	74.6			*74.6 %*	*23-117*		"	"	"

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